North West
Water Authority

Dawson House, Great Sankey
Warrington WA5 3LW
Telephone Penketh 4321

20th October, 1976.

To: Members of the Mersey and Weaver
Fisheries Advisory Committee
(Messrs. P. W. Jennings (Chairman);
J. S. Bailey; F. Burgess; F. Egerton;
A. Jones; T. N. McLoughlin; R. Newton;
A. Ross; Dr. J. W. Jones; and the
Chairman of the Authority (P. J. Liddell);
and the Chairman of the Regional Fisheries
Advisory Committee (J. R. S. Watson)
(ex officio)).

LOCAL

Dear Sir,

A meeting of the MERSEY AND WEAVER FISHERIES ADVISORY COMMITTEE will be held at 2.30 p.m. on WEDNESDAY, 27TH OCTOBER, 1976, in COMMITTEE ROOM NO. 1, DAWSON HOUSE, GREAT SANKEY, for consideration of the following business.

Yours faithfully,

G. W. SHAW,

Director of Administration.

A G E N D A

1. Appointment of Chairman.
2. Apologies for Absence.
3. Minutes of the last meeting (Previously circulated).
4. Fish Stocking by the Authority.
5. Greater Manchester County Council tipping proposals.
6. Report by Divisional Scientist on Fisheries activities.
7. Weed Growths in River Weaver.
8. Pollution incidents, information to the public.
9. Drought Situation (Report to follow).
10. Any Other Business.

NOTE: Lunch will be served in the Members' Dining Room at approximately 1.00 p.m. The Menu for the day is enclosed, and members attending for lunch are asked to indicate their choice of main course to the officer on duty near the Members' Retiring Room.

NORTH WEST WATER AUTHORITY

MERSEY AND WEAVER
FISHERIES ADVISORY COMMITTEE

27TH OCTOBER, 1976

FISH STOCKING BY THE AUTHORITY

1. Introduction

From time to time, at meetings of Fisheries Advisory Committees, members have enquired about policy in relation to trout stocking by the Authority.

Examination of this question on a regional basis has resulted in the production of this paper, which covers stocking not only with trout but with freshwater fish, and which puts forward proposals for Authority policy in relation to such work when undertaken by the Authority.

In considering what attitude the Authority should take on the question of stocking, and what policy it should adopt, it may be useful to consider the background to the need for stocking.

2. Background

Over the past 25 years, fishing pressure on public, club and association water has increased enormously. In the case of coarse fisheries, this has had relatively little impact upon stocks, as fish are almost invariably returned to the water at the end of a fishing session. In the case of trout, however, which, like salmon and sea trout, are normally taken for consumption or sale (and rising values have probably tended to make the latter use increasingly attractive), it appears that, on many waters, stocks have decreased, in some cases alarmingly, so that, increasingly, anglers have had to depend upon stocking to maintain their sport. There are, of course, exceptions to this situation where careful management, limitation of fishing effort or strictly enforced bag limits - or a combination of all three - has maintained the stock at a level capable of meeting the demands placed upon it. This position is more readily attained on enclosed waters, and many of the existing still-water fisheries in Britain are good examples of what may be achieved. On such waters, stocking with takeable trout up to a considerable size is carried on throughout the season and an annual 'take' of as much as 75% of the fish introduced has been recorded. On rivers, however, such work is complicated, and its effectiveness reduced, by the fact that there is nothing to prevent introduced fish from moving away, usually downstream, from the area into which they were released. The direct value of stocking to an individual club or owner is thus arguable, and if a Water Authority is carrying out all or part of the stocking, the desirability of financing work of such dubious value from public funds could be called in question. At the same time, work of this kind has a disproportionately high public relations value. If a Water Authority supplies fish for stocking a club water, members feel that they are "getting something for their licence fee", and that their fishery is being improved (whether or not this is true) - despite the fact that the licence fee, which is intended to contribute to the cost of many activities besides stocking, represents the cost today of only five 10" trout, and there must be few serious trout anglers who do not catch more fish than that in the course of a season.

3. Difficulties of Former River Authorities

Even in the time of the former River Authorities, when the areas of individual Authorities were much smaller than those of the Regional Water Authorities, problems arose over the question of stocking by an Authority. A number of different clubs and associations - apart from individual riparian owners - might have lengths of fishing on a particular river, and on a large river the number of such different interests could be considerable. If, as part of some annual stocking programme, trout or coarse fish, according to the nature of the water, were introduced by an Authority into the waters of some clubs, but not into those of others, the latter usually felt that they had been discriminated against - and did not hesitate to say so. The limiting factor in any work of this kind was usually a financial one, which some Authorities tried to overcome, so far as trout were concerned, by operating their own fish farms. This arrangement, while certainly convenient, was not necessarily a true economy, since costs tended to be concealed within the Authority's finances. Coarse fish were usually obtained by netting or electro-fishing on waters where the owner wished to have their numbers reduced, e.g. an over-stocked lake, or waters managed as trout fisheries.

When it is remembered that, in 1975 for example, trout introduced by clubs and individuals in the area of the former Lancashire River Authority alone totalled more than 70,000, the scale on which stocking with these fish is carried out will be appreciated. With the emphasis on stocking, principally with takeable trout, the cost last year was probably in the region of £30,000. Assuming rather less stocking in the former Cumberland River Authority area, and considerably less in the former Mersey and Weaver River Authority area, the total cost last year of introduced trout may, nevertheless, have exceeded £50,000 for the Region. For the Authority to accept responsibility, as has been suggested in some quarters, for all or the major part of, trout stocking is clearly impracticable on financial grounds alone. How then, could the problem be approached?

4. Migratory Fish

In the case of migratory fish, the rearing and introduction of young fish into suitable river systems is justified on the grounds that returning adults are available to be taken by netsmen (if any) and by anglers throughout the greater part of the river's length. Any work aimed at improving the runs of these fish entering the river is thus of benefit to the fisheries of the river as a whole - with the possible exception of the upper waters to which fish may not penetrate until after the end of the fishing season, and then only to spawn.

5. Non-migratory Trout and Coarse Fish

Where non-migratory trout or coarse fish are concerned, the position is entirely different since the benefit (if any) accruing from their introduction is necessarily a local one. However, in view of the Authority's statutory responsibilities for fisheries, it may reasonably be assumed that the carrying out by the Authority of a certain amount of stocking work is a legitimate and necessary part of its fisheries activities. The salient questions relate to the scope of this activity, the financing of it, the identification

of waters which should properly be stocked and the source of the fish with which to carry out the stocking. These points are discussed below in relation to situations in which stocking might be considered.

(i) Stocking after Pollution

Restoration of a fishery after the occurrence of a fish mortality, which can be attributed solely to pollution from the Authority's activities, is clearly a responsibility which should be accepted in full by the Authority. The obtaining of the necessary fish - be they trout or coarse fish - and their introduction into the water should be undertaken by the Fisheries Department of the Rivers Division.

Other fish mortalities will occur from time to time as a result of pollutions, the blame for which cannot readily be attributed to a particular source. In such cases allocation of responsibility is often a lengthy process and in some instances, indeed, is never achieved. Thus the owners or tenants of fisheries are all too often the only losers. If there is a clear cut court case where the polluter is prosecuted and a conviction obtained, there are firm grounds on which a claim for compensation by owner or tenant can be based. In these circumstances, any move by the Authority to re-stock the affected water, in collaboration with owner or tenant, on the basis that the re-stocking is carried out without prejudice to any right of recovery from the convicted polluter, can help to produce early restoration of the fishery. A re-stocking arrangement, however, necessarily involves inclusion in the Fisheries budget of a provision to meet this possible cost which may, or may not, be utilised during the year.

(ii) Stocking of Authority's Own Waters

The Authority currently manages a small number of fisheries of its own on rivers and rather more fisheries on its own reservoirs. These fisheries are usually operated on a permit basis and, where there is any significant fishing pressure on the water, stocking - particularly with trout - is required. In the case of the Authority's river fisheries which are on waters which are primarily game fish waters, stocking with coarse fish, in addition to the stocks which exist naturally in these waters, is unacceptable.

In the case of reservoirs, where natural spawning grounds for trout are either limited or non-existent, stocking is likely to be the only means of maintaining the fishery, and may have to be not only quite extensive, but spread out over the fishing season to ensure that the stock in the water is not unduly depleted well before the end of the season.

As manager of a fishery, the Authority has a responsibility to ensure that it offers to its permit-holders a reasonable potential for satisfactory sport. On a large, lightly-fished water such as Haweswater, the natural stock will probably be adequate to achieve this for some time ahead. On smaller and more intensively fished waters, such as the river fisheries and reservoirs at Longdendale and Rivington, only regular introduction of fish can maintain an acceptable level of stock, and such work should carry considerable priority. The cost of stocking should be met from the funds of the Division managing the fishery, but the Fisheries Department of the Rivers Division should advise on stocking levels, etc.

(iii) Stocking of Waters Generally within the Region

The extent - if any - to which the Authority should accept responsibility (beyond that suggested in (i) above) for stocking waters which it does not manage or control is a difficult one. On the one hand, if full responsibility were to be accepted, the Authority would be likely, as is indicated earlier in this paper, to be accepting a financial commitment disproportionately large in relation to that involved in carrying out its other fisheries functions. On the other hand, if no stocking at all is carried out, it could be contended that the Authority was neglecting its statutory responsibilities for the maintenance and improvement of fisheries. A further complication could arise if the Authority were to set up its own fish farms in order to supply substantial numbers of fish for general stocking.

From replies received to a letter recently sent to Regional Fisheries Officers of other Water Authorities it is clear that they are taking considerable care, in the distribution of any fish produced in their own farms, to ensure that the allegation cannot be made against them that they are in direct competition with commercial fish farmers. Fish from Authority-owned farms are used almost entirely for stocking Authorities' own waters, mainly reservoirs, and only relatively small surpluses are sold to the public either for stocking or for human consumption. It is clear that the supply of fish for stocking club, association and private waters is generally regarded as the field of the commercial fish farmer.

This is not to say, however, that the Authority might not make some general contribution in the field of stocking. It would be possible to hatch and rear trout and to release them as fed fry or fingerlings into tributary streams for the general benefit of the river system concerned, in much the same way that salmon and sea trout fry are reared and released. The drawback to such a scheme, however, lies in the fact that few tributaries do not already contain, or give access to, natural spawning trout, and thus carry their own juvenile populations. Unless these are well below the carrying capacity of the water - a point which is usually very difficult to assess - the addition of further young fish can only produce imbalance between stock, living space and food, and may result is substantial fry mortality.

On a much smaller scale, trout removed in the course of preparing nursery streams for the release of salmon and sea trout fry can be re-distributed to fishing areas. However, the numbers involved are unlikely to be sufficient to do more than relatively small local stocking, and perhaps to cause friction with clubs who have not received an allocation of fish. Despite this problem, however, there seems no reason why fish from this source should not be distributed in the area where they are obtained, provided that the owner of the water from which they are removed has no objection.

There will always be occasions when it may be desirable, as part of some survey or investigation, to release considerable numbers of trout or coarse fish into a water, probably with a dye mark or other means of identification on them, and such action is clearly well within the Authority's statutory powers.

6. Stocking with Coarse Fish

Much controversy has long existed over the merits and demerits of coarse fish stocking. By reason of their fecundity, and environmental requirements for spawning, together with the fact that, when caught, they are not normally removed permanently from the water; given a reasonably suitable habitat, coarse fish can quickly build up a large, self-supporting population, particularly in still or slow-flowing waters.

It has long been held by many anglers that the best cure for poor or deteriorating fishing results is to re-stock. In fact, under these conditions, re-stocking can sometimes be damaging to a fishery as when, for example, over-population or disease is the cause of the decline. Equally, however, stocking can be important to the success of a fishery as in the case of a new water or the introduction of a species which is absent from the water, apart from restoration of a fishery after pollution - probably the most frequent situation and one which genuinely requires stocking to be carried out.

Coarse fish for stocking can be obtained, at a cost usually considerably greater than that of trout, from a very limited number of suppliers. An alternative source is pools in which natural breeding takes place, the stocks being netted out as required, leaving mature fish to continue breeding. Efforts are being made to establish a number of these pools in the predominantly coarse fishing areas. In view of the restricted commercial supplies of coarse fish in relation to the demand which exists for them, it appears unlikely that the use by the Authority of coarse fish stock pools to help to supply the needs of clubs will lead, at any rate in the foreseeable future, to conflict with commrcial interests, particularly in view of the near-impossibility of obtaining any supplies from the Continent, where such fish are more readily available, by reason of import restrictions imposed by the Ministry of Agriculture, Fisheries and Food in the interests of control of the spread of fish disease to this country.

7. Summary and Recommendations

As future policy, therefore, it is recommended that:-

(a) The Authority should be free to undertake restocking in order to restore a fishery, destroyed or damaged by pollution from a sewage treatment works or other installation operated by the Authority.

(b) The Authority stock, as necessary, waters including reservoirs which it owns or leases, where fishing is made available on permit to the public.

(c) In order to meet the commitments at (a) and (b) above, the Authority should be able to buy from commercial sources, to use existing facilities, or to set up new facilities as may be considered most effective and convenient for the purpose.

(d) In the case of coarse fish, once facilities have been established, the Authority should be free to supply fish to clubs for restocking their waters.

(e) On waters other than those which they own or control, the Authority at its own discretion, and with the prior consent of the owners, carry out any stocking which may appear necessary for the maintenance, improvement and development of fisheries, and in doing so, should be free to obtain fish for that purpose from whatever source may appear most suitable.

(f) The question of charging for the supply of fish should be considered on its merits in each case and any charge made should be broadly in line with current market prices for the fish involved.

Item No. 5

NORTH WEST WATER AUTHORITY

MERSEY AND WEAVER
FISHERIES ADVISORY COMMITTEE

27TH OCTOBER, 1976

GREATER MANCHESTER COUNTY COUNCIL TIPPING PROPOSALS

1. Letters have been received from the Abram Labour Club Angling Club and the National Federation of Anglers North West Regional Council, expressing concern that Greater Manchester County Council plan to use barges to transport refuse along the Bridgewater and Leeds and Liverpool Canals to a tipping site at Hey Brook between Abram, Wigan and Leigh.

2. They express the view that should the plan be implemented, heavy barge traffic would have a detrimental effect upon the fisheries in the canals by:-

(i) making it impossible for anglers to fish; and

(ii) leading to de-population of the fish stocks due to the destruction of both the natural food and the spawning ground of the fish which would ensue by reason of the wash from such barges.

They are also concerned that should tipping take place at this site, pollution at Pennington Flash might follow in spite of controls being imposed as the proposed site is bordered by the already polluted Hey Brook, and the Brook is a feeder stream of the Flash.

3. Following consultations between officers of the Authority and GMC, it has been ascertained that the Hey Brook site is one of a number of possible sites that the Council have had under consideration as suitable for refuse disposal. At the present time, they do not have planning permission to use the site for this purpose, (apart from one small section which was already in use prior to reorganisation).

4. The Council have been informed that should they pursue the Hey Brook scheme, the Authority would at the planning and licensing stage, require them to undertake such tipping without causing further pollution of the Hey Brook or of Pennington Flash, or any of their tributaries. This undertaking would act as a safeguard to protect the water quality and thereby fishery activities in the area. It would then be for the Council to consider whether, in the light of the works that would be necessary to this end, the utilisation of the site was an economic proposition.

5. Although the Council have been considering the use of barges as a means of transportation, and have estimated the required number to be approximately 20 per day, they have now shelved this scheme due to difficulties associated with the lack of locks in the Hey Brook area and the lack of height at the Leigh Road Bridge.

6. It is possible however that the Council might seek to resurrect the scheme in the future. Should this be the case, unless the Authority were satisfied that the use of the site posed no unacceptable risk to the quality of both surface and underground water, an objection would be made to the planning application and if necessary to the granting of a licence under the provisions of the Control of Pollution Act, 1974.

NORTH WEST WATER AUTHORITY

MERSEY AND WEAVER
FISHERIES ADVISORY COMMITTEE

27TH OCTOBER, 1976

REPORT BY DIVISIONAL SCIENTIST
ON FISHERIES ACTIVITIES

1. GENERAL FISHERIES MANAGEMENT

Fifteen requests for advice on fisheries matters necessitating site visits were received in the review period.

Potential of undeveloped waters	8
Deteriorating fishery	3
General Management	4
Development of trout farm	1
Effect of silage pollution on existing fishery	1

A severe silage pollution on the catchment to Lymm Dam posed a serious threat to the fishery. The effects of the pollution were carefully monitored with chemical surveys, a dissolved oxygen survey in the Dam and fish in cages. In the event the spawning activities appear to have suffered little harm.

2. STOCKING

Applications for consent to introduce the following fish into waters in the area have been approved:-

Brown trout (Wirral)	80
Crucian carp (Macclesfield Canal & Northwich)	4,300
Common carp (Allostock, Northwich)	100
Roach (Macclesfield Canal & Allostock)	13,000
Gudgeon (Macclesfield Canal)	7,000
Rudd (Macclesfield Canal & Knutsford)	4,100
Perch (Allostock)	2,000
Tench (Allostock)	500
Bream (St. Helens Canal)	2,000
Mixed coarse fish (Northwich)	2,500
TOTAL	35,580

3. BIOLOGICAL WORK

Biological River Surveys

Main Rivers	17
Main River Tributaries	5
Canal	1

During the summer months an alternative form of fish toxicity test to the standard static laboratory test has been under examination. One member of the biological section has been working in close collaboration with two Master of Science students from Manchester University on the development of the Carter Bottle Test. The procedure involves putting small trout into stoppered water bottles and recording the amount of oxygen used up before asphyxiation takes place.

Fish in samples containing a toxic constituent use up less oxygen than those in the controls and the difference gives an indication of theamount of toxicity present. So far this rapid bioassay appears to be quicker, more sensitive and cheaper to run than the standard static test.

The preliminary electro-fishing survey of the Mersey and Weaver catchments has continued through the Summer.

River Tame

The survey revealed a thriving population of brown trout, stone-loaches, minnows and sticklebacks in the top stretch down to the Chew Brook. The local Angling Club have also stocked this river with chub, dace and grayling although none were encountered on the survey. Sticklebacks survive just below Saddleworth Sewage Works but no furth downstream. Fish cage work and toxicity testing are being continued in the lower stretches.

In the Hull Brook stoneloaches are abundant and brown trout were common. The Diggle Brook is less productive but these two species were both present. The Chew Brook was devoid of fish life.

River Goyt

The survey results of the main river were, as expected, rather poor. There is a sparce brown trout and bullhead population in the unpolluted stretch between Fernilee Reservoir and Whaley Bridge. One perch, probably a stray from the Peak Forest Canal was caught at Strines and one brown trout was taken from the river at Compstall. Sticklebacks were common at the bottom of Stockport.

The Survey of the Black Brook revealed the presence of a hitherto unknow population of brown and rainbow trout, bullheads and lampreys. The grayling introduced to the River Sett in the last two or three years are breeding successfully alongside the brown trout, stoneloaches and bullheads.

River Weaver

The survey initially carried out on the stretch upstream of Nantwich at the time of the caustic soda pollution last November has been continued down to Church Minshull. Upstream of Shrewbridge at Batherton Hall, which was the limit of the fish mortality, the survey this August revealed a large head of roach (up to one pound) gudgeon and stoneloaches.

Small numbers of perch, eels and bullheads were also noted.

At Beam Bridge, Nantwich, a very healthy fishery exists. Bream (one to two pounds),eels (also one to two pounds), roach and tench were all taken. Several very large roach were stunned but escaped capture in the deep pools. Gudgeon and stoneloaches were abundant with bullheads common.

Upstream of Crewe Effluent Treatment Works, there is no fishery of any substance as only stoneloaches and sticklebacks were caught.

At Church Minshull the river upstream of the weir is totally fishless and recent chemical surveys suggest this is due to low dissolved oxygen levels and ammonia toxicity. Aeration from the weir creates slightly more favourable conditions downstream. A sparse population of roach, rudd, dace, gudgeon and perch was found together with a larger number of the low-dissolved-oxygen-tolerant stoneloaches and sticklebacks. Local anglers report that bream are occasionally caught.

No fish were encountered in the Valley Brook upstream of Crewe but downstream 30 small roach were taken in a 100 metre stretch. They were all in good condition and together with stoneloaches and gudgeon would appear to offer the basis of a reasonable fishery.

A brief survey of the Peover Eye produced a small number of stocked trout in the Upper Reach but only small-fish species lower down.

River Mersey

Brief fish tests and a dissolved oxygen survey have produced disappointing results which indicate there may be an oxygen deficiency problem in the river. In particular, the first flush of rain in September following the long summer drought produced low oxygen conditions which would probably have been lethal to any existing fishery. Further investigation with the new Rapid Bioassay technique is planned.

River Dane

Electrofishing cannot be carried out downstream from Middlewich because of the salt content. A good mixed fishery at Byley Bridge and Holmes Chapel was found in the preliminary survey. Below Congleton only stoneloaches and lampreys were found. A more extensive survey is required for the Congleton stretch.

Other Rivers

In the River Dean only a nominal fishery was encountered. None of the trout which are regularly stocked in the River Gowy were seen, only a healthy population of eels, stoneloaches, gudgeon and rudd. In the Micker Brook ten small trout were caught and are probably part of the stocking of ex-toxicity-test fish earlier in the year.

4. FISH MORTALITIES RECORDED DURING PERIOD

Sewer blockage	2
Salt excess	2
Suspected pollution	3
Natural causes	8
Unconfirmed reports	2
TOTAL ..	17

Contrary to expectations the long hot summer produced very few mortalities. Sewer blockages resulted in the loss of several hundred fish in a pool at Stalybridge and a smaller number in a pool at St. Helens. In the latter case high water temperatures and the fish louse *Argulus* added to the problems in the fishery.

Throughout the summer months, the River Dane has been subject to high concentrations of salt due to a lack of dilution for a consented discharge of brine in the Middlewich area. Apart from one small incident this has not created any fish mortality problems. At the beginning of May a series of events combined to produce a serious fish mortality in the two miles above the confluence with the River Weaver. A gradual build-up of silage in a small tributary, followed by simultaneous vandalism at Rudheath Effluent Treatment Works and the fracture of a brine main in Northwich resulted in what appeared to be a total fish kill. The species principally affected were stickleback and gudgeon in the ratio of 8:1, but small numbers of bream, perch and dace were also affected. This Authority and ICI Limited have made an offer of substantial restocking of the affected length to start this autumn.

A suspected chemical spillage killed over 200 trout in the Randall Carr Brook, a tributary to the River Goyt. Another chemical spillage on the Black Brook gave the first indication of the presence of fish in another Goyt tributary.

There were only three complaints of fish mortality which could be directly attributed to the hot summer conditions. The loss of about 200 fish in Pennington Flash is almost an annual event in a water which is highly eutrophic.

5. FISHING - GENERAL COMMENTS ON SPORT

July

29 lb. total catch of roach - Elton Reservoir
2 lb. 4 oz. roach record for Combes Reservoir

August

5½ lb. common carp - Middlewich Branch of Shropshire Union Canal
21 lb. carp - Roman Lakes, Marple
Over 3 lb. perch - Holling Grove Dam
17 lb. carp - pit near Northwich.

Item No. 7

NORTH WEST WATER AUTHORITY

MERSEY AND WEAVER
FISHERIES ADVISORY COMMITTEE

27TH OCTOBER, 1976

THE EFFECTS OF WEED GROWTHS ON ANGLING IN THE WEAVER NAVIATION DOWNSTREAM OF VALE ROYAL LOCKS

1. At the last meeting of the Committee held on 23rd June, 1976, the Rivers Division were asked to investigate the problem of weed growth in the River Weaver downstream of Vale Royal Locks. The results of the investigation are set out below.

2. The River Weaver generally supports a wide variety and abundance of vegetation throughout the summer months. Floating duckweed *(Lemna)* at the margins has a particular nuisance value, but dense growths of Water Buttercup *(Ranunculus)*, Canadian pondweed *(Elodea)* and several other species of pondweed *(Potamogeton)* can fill out the water space up to at least 6 feet from the bank. The exact dimensions of the Navigation Cut are not known but they are such that flow velocities of the water are virtually negligible. Taking an assumed mean depth of 10 feet in the Cut, it has been calculated from flow figures that the current upstream of Bottom Flash is of the order of 20 times as fast as in the Navigation. This means in effect that conditions in the Navigation are static and the floating weeds are never going to be removed by flowing water.

3. Further calculations indicate there is insufficient water available upstream of the locks for its release to be effective in removing the duckweed. Since most of the submerged weeds can grow in quite strong currents, physical scouring is unlikely to affect them either. At the best, top vegetation would be removed by a strong flush, leaving stems and roots to regenerate.

4. Aquatic herbicides are in widespread use for the control of nuisance weeds and offer a very convenient means of dealing with the problem. At manufacturers recommended doses there is no danger to fish life, provided it is carried out early enough in the season for the resulting decaying vegetation not to remove too much dissolved oxygen from the water. Since angling difficulties are only experienced at the margins, and mainly on the left-hand bank, it is feasible to restrict treatment to a band of 6 feet on this side only. Several of the granular herbicides available on the market have slow-release properties and would be particularly suitable for localised application at the margin. The cost of the herbicide for the 1¼ acres involved, assuming an average marginal depth of 3 feet would be of the order of £70-£80 at present day prices. Labour charges would have to be added. One application would be sufficient for one season.

5. If it is thought necessary only to control the floating duckweed then a surface spray of diquat is considerably cheaper at about £7 per acre for the chemical. Repeated applications might be required as this weed has rapid regenerative properties.

6. Weed cutting by mechanical methods is not practised in this part of the country to any great extent and even if suitable equipment were available, labour costs would probably be prohibitively expensive.

NORTH WEST WATER AUTHORITY

Item No. 8

MERSEY & WEAVER FISHERY ADVISORY COMMITTEE

27TH OCTOBER, 1976

POLLUTION INCIDENTS, INFORMATION TO THE PUBLIC

1. A request has been received from Lymm Angling Club for the Authority to inform Angling Clubs of sources of pollution threatening their waters which will enable them to carry out investigations.

2. The concern stems from a particular incident where a discharge of silage liquor threatened the fish life in Lymm Dam. Officers of the Authority had received a complaint from a member of the public of possible pollution of the Dam and this was investigated immediately. The discharge was found, and formal samples were taken, the farmer being advised that legal proceedings may be taken and he should take steps to stop the pollution immediately. The following day when investigation and action were already well under way, the Club Secretary also notified officers of the pollution.

3. Remedial action on the farm was not as rapid as it should have been and due to the concern of the Authority's officers for the value of the Dam, both from the fishing and the amenity view, it was arranged for an Authority tanker to empty the tank on the farm from which the pollution was arising. Chemical and biological monitoring of the steam and the Dam were also taking place.

4. This particular incident can be taken as representative of many:- information is received, the Authority's officers investigate, the source of pollution is found, and they seek remedial action under the authority of statute law. Members of the public, including Angling Clubs, on occasion feel they could do better than the Authority's officers. However, they would find the problem more difficult than perhaps they imagine. They would not have the powers of entry onto private land which the Authority's officers hold, and quite often an apparent source is not the most important one. Offenders are not always co-operative; indeed in the past the Inspectors of the Authority have been threatened with physical violence, including use of shot-guns, notwithstanding that it is a serious offence to obstruct the Authority's officers when carrying out their duties.

5. It is unrealistic to expect the Authority to give information to the public before investigations are complete, and when legal action, as in this case, may be under consideration. The Authority is in a similar position to the police in these matters, who would never contemplate naming suspects before they are charged. In the case where the discharge is covered by a consent, or information is derived from a sample of effluent, Section 12 of the Rivers (Prevention of Pollution) Act 1961 makes it an offence to disclose any information, with only three specific and narrow exceptions. The penalties for this offence are as high as the offence of polluting the river, and officers of the Authority cannot be expected to contravene these provisions.

6. In the circumstances therefore no change in the procedures can be recommended by the officers who must retain their discretion as to what information is divulged and to whom.

NORTH WEST WATER AUTHORITY

Item No. 9

MERSEY AND WEAVER
FISHERIES ADVISORY COMMITTEE

27TH OCTOBER, 1976

DROUGHT SITUATION

1. As a result of the drought situation prevailing this summer, the Government decided that additional statutory powers were required to assist Water Authorities in water conservation, and in consequence the Drought Act, 1976, was passed on 6th August, 1976.

2. The Act enables Water Authorities to apply to the Minister for Drought Orders to prohibit or limit prescribed uses of water, vary compensation water provisions and supply water by standpipes or water tanks.

3. Because of the situation prevailing in the Authority's Area application was made for an Order to cover the whole of the North West Region, resulting in the granting of the North West Water Authority (Prescribed Uses)(Drought) Order, 1976, which came into operation on 17th September, 1976. Members will be familiar with details of the prohibitions imposed by the Order which have in fact now been lifted.

4. In addition to these prohibitions applications have been made for Orders under Section 1(3)(e) of the Act, authorising reduction of compensation water or variations of similar requirements as set out in the Appendix hereto.

List of waters in the Mersey and Weaver Area in respect of which applications have been made to the Secretary of State for Orders under Section 1 of the Drought Act, 1976, to reduce prescribed flows in rivers or to reduce the quantity of compensation water from reservoirs.

Lake or Reservoir	Receiving Watercourse	Actual Compensation Water	Reduced Compenation Water	Present State of Order
Tumbles Reservoir	Bradshaw Brook	1. During every day of 24 hours reckoned from midnight, at a rate of not less than 5.64 cubic feet per second. 2. To deliver washing water for distribution to and amongst the several falls on the Bradshaw Brook in accordance with the provisions of Section 11 of the Bolton Water Order 1967.	For a Maximum period of six months from the coming into operation of the Order:- 1. 1.84 cubic feet per second. 2. These requirements to be suspended.	Order came into force on 15th October, 1976.
Rayoh Reservoir	Bradshaw Brook	During every day of 24 hours reckoned from midnight, at a rate of not less than 1 cubic foot per second.	For a maximum period of six months from the coming into operation of the Order a continuous release of 0.23 cubic feet per second.	Order came into force on 7th October, 1976.
Delph Reservoir	Delph Brook	Water in a regular and continuous flow at the rate of 945,766 gallons during twelve hours of every day (Sundays, Good Fridays and Christmas Days only excepted) between 5 o'clock in the morning and 5 o'clock in the afternoon.	For a maximum period ending on the 28th February, 1977 100,000 GPD.	Order came into force on 1st October, 1976.

Lake or Reservoir	Receiving Watercourse	Actual Compensation Water	Reduced Compensation Water	Present State of Order
Hurst Reservoir	Hurst Brook	250,000 GPD	For a maximum period of six months from the date of the Order 10,000 GPD	Withdrawn
Swineshaw Reservoir	Shelf Brook	189,000 GPD	For a maximum period of six months from the date of the Order 50,000 GPD	Order came into force on 14th October, 1976
Walker Wood Reservoir	Swineshaw Brook	800,000 GPD	For a maximum period ending on 28th February, 1977 200,000 GPD	Awaiting approval
Clough Bottom Reservoir	Whitewell Brook	240,000 GPD	For a maximum period ending on 28th February, 1977 100,000 GPD	Order came into force on 7th October, 1976
Castleshaw Reservoirs	Hull Brook	500,000 GPD	For a maximum period ending on 28th February, 1977 100,000 GPD	Order came into force on 1st October, 1976
Greenfold Reservoir	Folly Brook	150,000 GPD	For a maximum period ending on 28th February, 1977 100,000 GPD	Order came into force on 30th September, 1976
Lamaload Reservoir	River Dean	At present, in addition to the 150,000 galls of water the Authority are required to discharge daily from their Lamaload Reservoir into the River Dean, they are also required, when necessary, to discharge into the River Dean up to 400,000 GPD. To maintain a	For a maximum period ending on 28th February, 1977, to reduce the additional maximum requirement of 400,000 GPD to 250,000 GPD.	Order came into force on 1st October, 1976

Lake or Reservoir	Receiving Watercourse	Actual Compensation Water	Reduced Compensation Water	Present State of Order
		uniform and continuous daily flow of 730,000 gallons over the gauge situate immediately above the inlet to the Clough Pool.		
)ottoms and 'eggnose Reservoirs	River Bollin	By Section 23 of the Macclesfield Corporation Act, 1939, the Authority are required to discharge into the River Bollin at or about the point of junction of the discharge channel from their Bottoms Reservoir and the overflow from their Teggnose Reservoir 520,000 GPD in a regular continuous and uniform flow.	For a maximum period ending on 28th February, 1977, to reduce this requirement of 525,000 GPD to 250,000 GPD.	Order came into force on 1st October, 1976.
;ongdendale 3ottoms Lodge Reservoir	River Etherow	At the present time the Authority is required to discharge the following quantities of compensation water from their Bottoms Lodge Reservoir into the River Etherow. 1. When the flow at the Melandra Gauging Station on the River Etherow (excluding compensation flows from the Longdendale Reservoir) is greater than 23 Megs (5 MG) per day, such quantities as will maintain a total flow of not less than 68 Megs. (15 Mgs) per day at the River Gauging Station.	For a maximum period ending on 28th February, 1977, to reduce these amounts of compensation water to continuous releases of 15 Megs (3 Mg) per day.	Order came into force on 1st October, 1976

Lake or Reservoir	Receiving Watercourse	Actual Compensation Water	Reduced Compensation Water	Present State of Order
		2. When such flow is less than 20 Megs (5 Mg) per day the compensation water discharges are reduced to 45 Megs (10 mg) per day.		
New Line Reservoir	Tributaries of the River Irwell	Under Section 29 of the Rossendale Water Works Act 1853 (b) the Authority are required to discharge compensation water from their New Line Reservoir equal at least to 1 cubic foot per second from 6.0 a.m. Mondays, to Saturday for the following periods:- Monday to Friday - 11 consecutive hours Saturday - 5 consecutive hours	For a maximum period ending on 28th February, 1977. To reduce this quantity of compensation water to a continuous discharge of 0.046 feet per second on every day of the week.	Order came into force on 30th September, 1976

Watercourse	Present flow above which Abstraction by the Authority (or other body) is authorised	Reduced flow above which abstraction by the Authority (or other body) is authorised	Present State of Order
River Dane	At the present time, ICI Ltd., are licensed to abstract up to 30.8 mgd from the River Dane at their premises at Ravenscroft. Their abstraction is subject to there being a sufficient head of water over the weir across the River Dane at the Ravenscroft Pumping Station to sustain a downstream flow of six cubic feet per second (approx. 15 megs. per day)	To reduce temporarily (for a maximum period of six months from the date of the order) the downstream flow from six cubic feet per second to four cubic feet per second (Approx. 10 megs. per day).	Withdrawn

In addition to the applications listed above, the Authority has applied to the Secretary of State for Orders under Section 1 of the Drought Act, 1976, in respect of the following Reservoirs where it is proposed to adopt a 'water bank' system of compensation water releases. This system would give a two-part compensation water release, comprising a nominal figure, say 10,000 gallons per week, to which would be added an unspecified and variable quantity of compensation water quantified in accordance with the demands of licensed abstractors from the receiving stream.

The Department of the Environment have indicated that they are unwilling to recommend to the Secretary of State that he make the necessary Orders in their present form as they consider that the essence of these Orders is water rationing, which would be more appropriate to Orders made under Section 2. These applications are therefore at present in abeyance pending further consideration.

An oral report will be made to the Committee.

The reservoirs concerned are:-

Clowbridge Reservoir
Cowpe Reservoir
Greenbooth Reservoir
Holden Wood Reservoir
Ogden Reservoir

Applications in respect of the following reservoirs have now been withdrawn:

Ashworth Moor Reservoir
Dovestones Reservoir
Ramsden Clough Reservoir
Springmill Reservoir
Watergrove Reservoir